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is represented in North America by the single genus *Saxicola*; but includes the Old World genera *Pratincola*, *Ruticilla*, etc. The group Turdeæ includes the three genera *Hylocichla*, *Turdus*, and *Hesperocichla*. The group Luscineæ has for American representatives the genus *Catharus*, and possibly *Cyanecula*, which has been supposed to occur in Alaska. The Meruleæ includes *Merula*, *Semimerula*, *Cichlherminia*, and *Mimocichla*. The Platycichleæ includes *Cossyphopsis* (gen. nov., type *Turdus reevei* Lawr.), *Platycichla*, and *Turdampelis*. The Myadestæ contains the single genus *Myadestes*, from which, however, *M. leucotis* (Tschudi) is removed, being transferred, as the type of a new genus *Entomodestes*, to the Ptilogonatiidæ. As regards the much 'emended' name *Myadestes*, Dr. Stejneger revives Swainson's original orthography, which he maintains is correct.

The genus *Cichlherminia*, as Dr. Stejneger observes, has been regarded as an intermediate link between the true Thrushes and the Mocking Thrushes. But he affirms that this has resulted from the fact that very diverse species have been associated under *Cichlherminia* (vel *Margarops*), a part of which are true Thrushes and part Mocking Thrushes. *Cichlherminia* (type *C. herminieri*), in a restricted sense, is retained among the Turdinæ, while the other species, forming the restricted genus *Margarops*, are placed among the Miminæ, the former alone being found to have a booted tarsus.

Dr. Stejneger's synopsis of the family extends only to the genera and higher groups as represented in America. The generic synonymy is fully given, and the generic diagnoses are supplemented by general remarks and figures illustrative of the principal generic characters.—J. A. A.

**Coues on the Structure of Birds' Ears.**—Dr. Coues, in a series of three articles recently published in 'Science,'\* gives a clear and detailed account of the mechanism of the ear in birds, taking the human ear as the chief basis of comparison. The articles are illustrated with figures—after Parker and Ibsen—which aid greatly to a clear conception of the structures described.—J. A. A.

**Jeffries on the Epidermal System of Birds.**†—Mr. Jeffries's paper, of nearly forty pages and three plates, reports the results of his studies of the epidermal appendages in birds, with reference to their structure, development, and homologies. These appendages embrace the feathers, scuta, claws, spurs, toe-pads, bill, combs, wattles, and the spines of the tongue and mouth, which have been studied as found in the adult, and their development traced from the fourth day of incubation. The structure of mature feathers is not considered, this part of the subject having already received so much attention. Mr. Jeffries's investigations have

\* A Hearing of Birds' Ears. By Elliott Coues. Science, Vol. II, Nos. 34, 38, and 39, pp. 422-424, 552-554, 586-589, Sept. 28, Oct. 26, Nov. 2, 1883, figg. 9.

† The Epidermal System of Birds. By J. Amory Jeffries. Proc. Boston Soc. Nat. Hist., Vol. XXII, pp. 203-240, pll. iv-vi. Dec. 1883.

been based mainly on the common chick and duckling, yet many forms in other orders have been examined, and in all cases found to agree so closely with the two types specially investigated, that "any statement made for the chick may in all probability be extended to cover the entire group of carinate birds."

The scope and character of the paper may be further indicated by the following transcript of its sub-headings:—

(1) Adult Skin; (2) Development of the Epiderm; (3) Development of Embryo Feathers; (4) Development of Pinfeathers; (5) Scuta; (6) Development of Scuta; (7) Claws; (8) Development of Claws; (9) The Bill; (10) Development of the Bill; (11) Combs and Wattles; (12) Spurs; (13) Toe-pads; (14) Spines of Mouth; (15) Summary; (16) Bibliography. The literature of each special subject is first passed in review, then the adult structure of the part is considered, and finally its mode of development. The morphology of the various appendages is treated in the general 'Summary.'

Many authors have assumed *à priori* that scuta are morphologically identical with the scales of reptiles,—a proceeding our author claims to be 'totally unscientific,' and pronounces the evidence against this view to be overwhelming. Neither are spurs "to be classed as modified scuta, as has been done by those who consider scuta and scales to be the same thing."

The modern view of feathers and hairs is that they are allied structures, though Gegenbauer speaks of them as divergent structures. "It is now known, however, that their early stages are the exact reverse of each other." For various reasons our author "considers feathers and hairs as *distinct* structures." Feathers and scuta are also said to be not homologous; the former originate as papillæ, the latter as folds, and so remain through life. "At no period . . . is there the slightest resemblance in form"; while "all the peculiarities of the mucous layer separate the feather from the scale." The "fact that feathers grow upon scuta shows them to be distinct structures."

In closing the author says: "I am well aware that at the present time, when the tendency is to ascribe everything to one common origin, the above conclusions will be distasteful to many. Yet, when examples of the separate origin of like structures—analogue organs—are so abundant, it seems rash to consider a slight resemblance a proof of genetic relationship." The fact that "Amphibians, from which the higher groups have probably been derived, have no special epidermal appendages except perhaps claws," he considers a "strong argument against the identity of any of the avian dermal appendages with those of Reptiles or Mammals."—J. A. A.

**Shufeldt on the Osteology of the Mountain Plover.\***—This is another of Dr. Shufeldt's osteological monographs, in which a member of the Plover.

\* Observations upon the Osteology of *Podasocys montanus*. By R. W. Shufeldt, M. D., Captain Medical Corps U. S. Army [etc., etc.]. Journ. Anat. and Physiol., Vol. XVIII, pp. 86-102, pl. v.